

WHAT IS CLAIMED IS:

1. A cutting apparatus for cutting a sheet material, comprising:
  - a platform for sustaining thereon said sheet material;
  - a rail structure secured onto said platform;
  - a sliding member disposed on and movable along said rail structure;
  - a cutting member movably engaging with and carried by said sliding member to pass through and cut said sheet material sustained on said platform; and
  - an adjusting member urging said cutting member to move relative to said sliding member so as to contact with said sheet material in response to a first external force status and returning said cutting member to move relative to said sliding member so as to release said cut sheet material in response to a second external force status.
2. The cutting apparatus according to claim 1 wherein said adjusting member comprises:
  - a knob for receiving an external force in either said first external force status or said second external force status; and
  - a sustaining member mounted in said knob and having a relatively thick portion urging said cutting member to move downwards in said first external force status and a relatively thin portion providing a space thereunder for said cutting member to retract in said second external force status.
3. The cutting apparatus according to claim 2 wherein said external force is a rotating force, said first external force status is the exertion of said rotating force in one of clockwise and counterclockwise directions, and the second external force status is the exertion of said rotating force in the other of clockwise and counterclockwise directions.

4. The cutting apparatus according to claim 2 wherein said adjusting member further comprises an elastic member interfacing between said knob and said sliding member for returning said knob to an initial position when there is no external force exerted.
5. The cutting apparatus according to claim 4 wherein said external force is a rotating force, said first external force status is the exertion of said rotating force, and said second external force status is the release of said rotating force.
6. The cutting apparatus according to claim 5 wherein said elastic member is a torsion spring.
7. The cutting apparatus according to claim 2 wherein said sustaining member comprises a pair of sustaining blocks disposed symmetrically and oppositely, each of said sustaining blocks having an intermediate peak portion and two lateral incline portions.
8. The cutting apparatus according to claim 7 wherein said cutting member comprises:
  - a rotary knife for completely cutting said sheet material; and
  - a holding element holding said rotary knife and sustained by said intermediate peak portion of said sustaining blocks to move downwards so as to make said rotary knife protrude from a slot of said sliding member in said first external force status.
9. The cutting apparatus according to claim 8 wherein said cutting member further comprises a resilient element engaging with said holding element and sustaining against said sliding member adjacent to said slot, and said resilient element is distorted when said cutting member moves downwards through said slot to contact with said sheet material in response to said first external

force status and recovered to push said cutting member to retract into said sliding member in said second external force status.

10. The cutting apparatus according to claim 2 wherein said cutting member comprises three cutting portions arranged in series.

11. The cutting apparatus according to claim 10 wherein said sustaining member comprises:

- a first sustaining element located at a first side of said knob, and having a rising incline ending at a first peak in a specific direction;

- a second sustaining element disposed at a second side opposite to said first side, and having a falling incline beginning with a second peak in said specific direction; and

- a third sustaining element consisting of a pair of sustaining blocks symmetrically disposed between said first and second sides, each of said sustaining blocks having an intermediate peak portion and two lateral incline portions;

wherein the positions of said first peak of said first sustaining element, said second peak of said second sustaining element, and said peak portions of said third sustaining element are arranged to respectively sustain said cutting portions of said cutting member at different time points while rotating said knob, thereby pushing essentially one of said cutting portions downwards at one time in response to said first external force status.

12. The cutting apparatus according to claim 10 wherein said cutting portions include:

- a first blade having a sharp portion for making said sheet material have a complete cut line while moving cross said sheet material;

a second blade having a gear-shaped blade including sharp teeth at an equidistant interval for making said sheet material have an intermittent cut line while rolling cross said sheet material; and

a third blade having a blunt portion for making said sheet material to have a folding line while moving cross said sheet material.

13. A carriage for use with a cutting apparatus for carrying a cutting member to cross over a sheet material, comprising:

a knob having a sustaining member therein for receiving a rotating force;

a coupling member having a slot and cooperating with said knob to define a receptacle for accommodating therein said cutting member; and

an elastic member interfacing between said knob and said coupling member for returning said knob to an initial position when said rotating force is released;

wherein said cutting member is urged by said sustaining member to protrude from said slot to contact with said sheet material in response to said rotating force and be retracted into said coupling member when said knob is returned to said initial position.

14. The carriage according to claim 13 wherein said elastic member is a torsion spring.

15. The carriage according to claim 13 wherein said sustaining member comprises a pair of sustaining blocks disposed symmetrically and oppositely, each of said sustaining blocks having an intermediate peak portion and two lateral incline portions.

16. The carriage according to claim 15 wherein said sustaining member further comprises:

a first sustaining element disposed in said knob and adjacent to one side of said sustaining blocks, and having a rising incline ending at a first peak in a specific direction; and

a second sustaining element disposed in said knob and adjacent to the other side of said sustaining blocks, and having a falling incline beginning with a second peak in said specific direction.

17. A cutting apparatus for cutting a sheet material, comprising:

a platform for sustaining thereon said sheet material;  
a rail structure secured onto said platform;  
a sliding member disposed on and movable along said rail structure;  
a cutting member movably engaging with and carried by said sliding member to pass through and cut said sheet material sustained on said platform;

a knob cooperating with said sliding member and having a sustaining member therein for receiving a rotating force to rotate from an initial position to a working position, said sustaining member having a relatively thick portion urging said cutting member to move downwards to contact with said sheet material when said knob is at said working position and having a relatively thin portion providing a space thereunder for said cutting member to retract when said knob is at said initial position; and

an elastic member interfacing between said knob and said sliding member for returning said knob to said initial position when said rotating force is released.

18. The cutting apparatus according to claim 17 wherein said elastic member is a torsion spring.

19. The cutting apparatus according to claim 17 wherein said sustaining member comprises a pair of sustaining blocks disposed symmetrically and oppositely, each of said sustaining blocks having an intermediate peak portion and two lateral incline portions.
20. The cutting apparatus according to claim 19 wherein said cutting member comprises:
- a rotary knife for completely cutting said sheet material;
  - a holding element holding said rotary knife and sustained by said intermediate peak portion of said sustaining blocks to move downwards so as to make said rotary knife protrude from a slot of said sliding member in response to said rotating force; and
  - a resilient element engaging with said holding element and sustaining against said sliding member adjacent to said slot for pushing said holding element so as to retract said cutting member into said sliding member when said rotating force is released.